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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

lhptoms@leehayes.com

Office Action Summary

Application No.

10/717,830

Applicant(s)

CONROY ET AL.

Examiner

LI B. ZHEN

Art Unit

2194

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 01 February 2010.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,3-6,8-18,20-23 and 26 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1,3-5 and 26 is/are allowed.
- 6) ☒ Claim(s) 1,6,8-18 and 20-23 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB-08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ ~~Notice of Informal Patent Application~~
- 6) ☐ Other: _____

DETAILED ACTION

1. Claims 1, 3 – 6, 8 – 18, 20 – 23, and 26 are pending in the application.

Continued Examination Under 37 CFR 1.114

2. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 2/1/2010 has been entered.

Allowable Subject Matter

3. Claims 1, 3 – 5 and 26 are allowed. Claims 1, 3 – 5 and 26 recite a "device that is a computer subsystem". Examiner interprets the device as a physical electronic device that is directed to statutory subject matter.

Response to Arguments

4. Applicant's arguments filed 2/1/2010 have been fully considered. Some of the arguments are not persuasive and some of the arguments are moot in view of the new grounds of rejection.

5. As to claim 6, applicant argues that Saint does not disclose or suggest “the shape of an on-screen cursor, the customizable tag-based document including image data specifying pixels that comprise the on-screen cursor” (paragraphs 0031 – 0032 of response).

This argument is moot in view of the new grounds of rejection that relies on Fedotov et al. to teach description of the on-screen cursor that includes the shape of an on-screen cursor and image data specifying pixels that comprise the on-screen cursor (see the rejection to claim 6 below).

6. As to claim 6, applicant argues that Saint fails to teach a “customized tag-based document” because the PC software used to “scale the pointer” of Saint is not the same as the “customizable tag-based document” (paragraph 0033 of the response).

Examiner respectfully disagrees and notes that Saint teaches an XML file describe how the input service behaves, what primitive, are used, data identifying the bounds of mouse coordinates, whether custom channels exist and where to obtain the code modules to interpret the raw input data [paragraph 0160]. The XML file describing the input service corresponds to the claimed customized tag-based document.

7. As to claim 16, applicant argues that the prior art does not teach “requesting the service to change a cursor shape, the act of requesting invoking a cursor shape service that changes the shape of the cursor” (paragraphs 0037 – 0042 of response).

This argument is moot in view of the new grounds of rejection that relies on Fedotov et al. to teach requesting the service to change a cursor shape, the act of requesting invoking a cursor shape service that changes the shape of the cursor (see the rejection to claim 16 below).

Claim Rejections - 35 USC § 101

8. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

9. Claims 6, 8 - 15 and 21 - 23 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

Claims 6, 8 – 15 recite “terminal service” comprising: a display service, a tag-based document, a unilateral contract, cursor position service, window service, window list service, window update service, keyboard service and mouse service. The various services are directed to a logical/software representation of a computer terminal and the tag-based document and unilateral control are electronic document. Therefore, the claimed terminal service is directed to software and electronic documents only and does not include any computer hardware. Computer software is functional descriptive material; however, function descriptive material is nonstatutory when claimed as descriptive material per se. When functional descriptive material is recorded on some non-transitory computer-readable medium, it becomes structurally and functionally interrelated to the medium and will be statutory in most cases since use of technology permits the function of the descriptive material to be realized. Since claim 6 and its

dependent claims do not recite the software as being recorded on a non-transitory computer-readable medium, the claim is interpreted as comprising functional descriptive material per se and non statutory. See MPEP § 2106.01.

Claims 21 – 23 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter. Claim 21 recites a computer-readable medium. The specification is silent regarding the meaning of computer readable medium. The broadest reasonable interpretation of a claim drawn to a computer readable medium typically covers forms of non-transitory tangible media and transitory propagating signals per se in view of the ordinary and customary meaning of computer readable media, particularly when the specification is silent. See MPEP 2111.01. Therefore, the computer-readable medium recited in claims 21 – 23 is directed is non-statutory subject matter. A claim drawn to such a computer readable medium that covers both transitory and non-transitory embodiments may be amended to narrow the claim to cover only statutory embodiments to avoid a rejection under 35 U.S.C. § 101 by adding the limitation “non-transitory” to the claim.

Claim Rejections - 35 USC § 103

10. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

11. **Claims 6, 8 – 18, and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over US 2002/0029256 A1 to Zintel et al. [hereinafter Zintel, previously cited] in view of US 2003/0101294 A1 to Saint-Hilaire et al. [hereinafter Saint, previously cited] and further in view of US 2004/0181796 A1 to Fedotov et al. [hereinafter Fedotov].**

12. As to claim 6, Zintel teaches in a networked computer system [paragraph 0042], a terminal service [paragraph 0062], comprising:

a display service [digital television, devices that support local user interface; paragraphs 0061, 0062 and 0078], a port identifier for the service [paragraph 0080], and a unilateral contract [paragraphs 0213, 0214, 0261, 0266 – 0269, 0524] for describing one or more behaviors of the display service [Contracts describe the public behavior of UPnP devices; paragraph 0557], wherein the one or more behaviors associated with a service are described by behavior sentences [paragraphs 0558 – 0563; paragraph 0213: "Contract defines network data packets 413, request/response patterns, and protocol"], wherein the unilateral contract is accepted when another service promises to perform the unilateral contract in accordance with the one or more behaviors [paragraphs 0524, 0528] or when the other service performs the unilateral contract in accordance with the one or more behaviors [paragraph 0214], and wherein acceptance of the unilateral contract creates an instance of communication between the display service and another service [paragraphs 0117, 0214, 0524, 0528]. Zintel does not specifically teach a cursor shape service with a port identifiable by an identifier, a

customizable tag-based document that describes the shape of an on-screen cursor, the customizable tag-based document including image data specifying pixels that comprise the on-screen cursor.

However, Saint teaches a display service includes a cursor shape service [various types of input, from no input at all to pen-input, keyboard, mouse, and button input. Each type of input will generally be handled by a respective input service, wherein the existence and capabilities of each input service will be described in that service's UPnP description information; paragraph 0144 – 0146 of Saint] with a port identifiable by an identifier [URLs for control and eventing; paragraphs 0109], a customizable tag-based document that describes the an on-screen cursor [XML file will describe how the input service behaves, what primitive, are used, data identifying the bounds of mouse coordinates, whether custom channels exist and where to obtain the code modules to interpret the raw input data; paragraph 0160].

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to further modify the system of Zintel to include the features of Saint. One of ordinary skill in the art would have been motivated to make the combination because this provides a mechanism that enables interaction between a low-cost networked device and an "extended" personal computer, wherein a majority of the software and hardware components used to enable the interaction are provided by the extended PC, and the remote device requires limited hardware that supports "lightweight" software service components [paragraph 0023 of Saint].

Zintel and Saint does not specifically disclose that the description of the on-screen cursor includes the shape of an on-screen cursor and image data specifying pixels that comprise the on-screen cursor.

However, Fedotov teaches describing an on-screen cursor include the shape of the on-screen cursor and image data specifying pixels that comprise the on-screen cursor ["cursor" object primitive may be the cursor of a mouse (or other pointing device), of virtually any shape...To fully define a cursor object, its image data (e.g., shape, color), its size and its hotspot coordinate (i.e., location) are noted; paragraph 0157 of Fedotov].

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to further modify the invention of Zintel and Saint to include the features of Fedotov. One of ordinary skill in the art would have been motivated to include the shape and image of the cursor into the XML description of the input service in Saint because this defines a presenter's cursor as an object primitive and allows the cursor to be correctly and easily placed by caching the cursor object and simply specifying the position at which to draw the object [paragraph 0157 of Fedotov].

13. As to claim 16, Zintel as modified teaches a computer-implemented method for processing input/output events by devices as services [an Event Subscription Server and an Event Source; paragraph 0062 of Zintel], the method comprising:

requesting, by a computing system configured to represent devices as services in a decentralized operating system [client device 950; paragraph 0554 of Zintel], a

service representing a device for an input/output event [various types of input, from no input at all to pen-input, keyboard, mouse, and button input. Each type of input will generally be handled by a respective input service, wherein the existence and capabilities of each input service will be described in that service's UPnP description information; paragraph 0144 – 0146 of Saint and paragraphs 0524, 0087 and 0106 of Zintel], the service including a port identifiable by an identifier that includes a uniform resource identifier [paragraph 0080 of Zintel and paragraphs 0109 of Saint] and a unilateral contract for describing one or more behaviors of the service [paragraphs 0213, 0214, 0261, 0266 – 0269, 0524 of Zintel], the unilateral contract expressed in a language specifying an order of messages that flow in or out of services [wire protocol (the content and sequence of network messages); paragraphs 0261 and 0267 of Zintel];

requesting the service [paragraphs 0152 – 0155 of Saint and paragraph 0157 of Fedotov] to change a cursor shape, the act of requesting invoking a cursor shape service that changes the shape of the cursor [cursor shape has changed and returning the current shape if it has; paragraph 0304 of Fedotov];

receiving a customizable, tag-based message that contains the input/output event [publishes updates by sending event messages, which contain the names of one of more state variables and the current value of those variables. These messages are also expressed in XML and formatted using the General Event Notification Architecture (GENA); paragraphs 0612 and 0276 of Zintel]; and

requesting the service to remove the input/output event [paragraphs 0308, 0310, and 0243 of Fedotov]. As to the motivation for combining Zintel, Saint and Fedotov, see the rejection to claim 6 above.

14. As to claim 8, Zintel as modified teaches the display service includes a cursor position service for describing the position of an on-screen cursor [paragraph 0144 – 0146 of Saint], the cursor position service including a port identifiable by an identifier that includes a uniform resource identifier [paragraph 0080 of Zintel] and a unilateral contract for describing one or more behaviors of the cursor position service [paragraph 0557 of Zintel].

15. As to claim 9, Zintel as modified teaches wherein the display service includes a window service for describing a window [paragraphs 0113, 0114 and 0119 of Saint], the window service including a port identifiable by an identifier that includes a uniform resource identifier [paragraph 0080 of Zintel] and a unilateral contract for describing one or more behaviors of the window service [paragraph 0557 of Zintel].

16. As to claim 10, Zintel as modified teaches wherein the display service includes a window list service [paragraphs 0113, 0114 and 0119 of Saint] for containing a list of window services appearing on a display, the window list service including a port identifiable by an identifier that includes a uniform resource identifier [paragraph 0080 of

Zintel] and a unilateral contract for describing one or more behaviors of the window list service [paragraph 0557 of Zintel].

17. As to claim 11, Zintel as modified teaches wherein the display service includes a window update service for refreshing a window represented by a window service [paragraphs 0113, 0114 and 0119 of Saint], the window update service including a port identifiable by an identifier that includes a uniform resource identifier [paragraph 0080 of Zintel] and a unilateral contract for describing one or more behaviors of the window update service [paragraph 0557 of Zintel].

18. As to claim 12, Zintel teaches a keyboard service [paragraphs 0144 – 0146 of Saint] with a port identifiable by an identifier that includes a uniform resource identifier [paragraph 0080 of Zintel] and a unilateral contract for describing one or more behaviors of the keyboard service [paragraph 0557 of Zintel].

19. As to claim 13, Zintel teaches wherein the keyboard service includes a data service for containing keyboard events generated by a keyboard [paragraphs 0144 – 0146 of Saint], the data service being capable of responding to queries to remove keyboard events for processing [paragraphs 0308, 0310, and 0243 of Fedotov]. As to the motivation for combining Zintel and Saint with Fedotov see the rejection to claim 6 above.

20. As to claim 14, Zintel teaches a mouse service [paragraphs 0144 – 0146 of Saint], the mouse service including a port identifiable by an identifier that includes a uniform resource identifier [paragraph 0080 of Zintel] and a unilateral contract for describing one or more behaviors of the mouse service [paragraph 0557 of Zintel].

21. As to claim 15, Zintel teaches wherein the mouse service includes a data service for containing mouse events generated by a mouse, the data service being capable of responding to queries to remove mouse events for processing [paragraphs 0308, 0310, and 0243 of Fedotov]. As to the motivation for combining Zintel and Saint with Fedotov see the rejection to claim 6 above.

22. As to claim 17, Zintel as modified teaches requesting the service for creating a window, the act of creating a window creating a window service [paragraphs 0113, 0114 and 0119 of Saint] with a port identifiable by an identifier that includes a uniform resource identifier [paragraph 0080 of Zintel] and a unilateral contract for describing one or more behaviors of the window service [paragraph 0557 of Zintel].

23. As to claim 18, Zintel as modified teaches comprising requesting the service for refreshing the window, the act of requesting invoking a window update service that repaints the window [paragraphs 0113, 0114 and 0119 of Saint].

24. As to claim 20, Zintel as modified teaches requesting the service to change a position of a cursor, the act of requesting invoking a cursor position service that changes the position of the cursor [paragraphs 0145 – 0146 of Saint].

CONTACT INFORMATION

25. Any inquiry concerning this communication or earlier communications from the examiner should be directed to LI B. ZHEN whose telephone number is (571)272-3768. The examiner can normally be reached on Mon - Fri, 8:30am - 5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hyung Sub Sough can be reached on 571-272-6799. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Li B. Zhen/
Primary Examiner, Art Unit 2194